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Using mobile phone diaries to explore children's everyday lives

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Abstract

We describe a novel approach to experience sampling as a response to the challenges of researching the everyday lives of young children at home. Parents from eleven families used mobile phones to send us combined picture and text messages to provide 'experience snapshots' of their child's activities six times on each of three separate days. We describe how the method aligns with an ecocultural approach, illustrate the variation in children's experiences and provide sufficient detail for researchers to adapt the method for the purposes of collecting data in other contexts. We summarise the benefits and shortcomings from the perspectives of families and researchers.

Keywords

Children, family, home, ecocultural, visual methods

This paper addresses the methodological challenge of finding out more about the everyday lives of young children. The context is *Toys & Technology*, a study that aimed to produce an account of children's interactions with leisure and work technologies, including technological toys, at home. Understanding more about everyday lives presented us with four key problems to address: i) our visits to family homes were generally during weekday working hours and so we could not be sure that what we observed was typical, ii) family homes do not easily lend themselves to participant research by outsiders, iii) the three- and four-year-old children who were the focus of our research were not able to remember some of the activities they had been involved in, or describe them fully, and iv) we wanted to know more about children's activities beyond the home.

Our solution was to develop an approach that utilised the media capture functionality of most mobile phones by asking parents to send us combined picture and text messages using their own phones, so providing a visual diary of family activities. Although we acknowledge that the case for providing children with opportunities to make their own voices heard has been made many times (Gallacher and Gallagher 2008), it was not our intention to focus solely on children's firsthand accounts of the roles of toys and technologies in their day-to-day lives. The mobile phone diaries, as described here, therefore differ from techniques in which children are the photographers, such as the methods described by Thomson (2008) or the Mosaic approach (Clark and Moss 2011) that involves children in a direct process of knowledge production through photography and child-led tours of their environments.

We did not choose the adult's point of view to make good perceived shortcomings in the quality or reliability of children's accounts; this was a theoretically motivated decision. The ways in which adults involve children in family life are central to their learning and development, as is recognised by the oft-cited statement that parents are children's first and most enduring educators. As we wanted to know more about children's encounters with technologies and how they fit into family routines we turned to their parents to provide some of this information. The mobile phone diaries are child-centred inasmuch as the focus of interest is the children but the data is mediated by adults – in this case, mainly their mothers as they were our first contact with the family and it was they that took the photos and provided the commentary. This reliance on parents' interpretations of their children's activities provided valuable data as it enabled us to find out about the interaction of family practices and children's everyday lives particularly, in this case, relating to children's play.

In the following sections, we recount a pragmatic approach to the problem of finding out what children *do* by describing the experience snapshots and showing how they arose from, and produced data consistent with, the ecocultural approach that underpinned the study. We position the mobile phone diaries within the tradition of experience sampling techniques and provide sufficient detail for researchers to adapt the method for the purposes of collecting data in other contexts, summarising the strengths and drawbacks from the perspectives of families and researchers, indicating some of the insights into children's play and discussing the approach within the context of visual methods.

The study

Toys & Technology focused on 14 households, with half the families categorised as being of low socioeconomic status (SES) in terms of the parents' employment and education. (For more information on the case-study families see Plowman, Stevenson, Stephen and McPake, 2012.) All of these families maintained their involvement throughout the duration of the study, enabling us to trace children's encounters with toys and technologies at home over the course of nine rounds of data collection from June 2008 to October 2009. This is a period of rapid change in children's lives and we drew on a constellation of methods to enable us to document and examine the complex interactions with peers, family members, the technology, other toys and cultural practices. Each round of data collection had a specific focus, such as surveys of toys and technologies, 'toy tours' of the home involving children photographing and talking about their favourite toys (Stevenson and Adey, 2010), parental perceptions of their child's play and learning (Stephen, Stevenson and Adey, forthcoming), video recordings of children's interactions with technological toys and family interviews on the changes brought about by the transition to primary school.

The aim of *Toys and Technology* was to produce a rich description of young children's encounters with technology in the home. As this required a foundation in the detailed documentation of everyday life, we drew on an ecocultural approach:

Every cultural community provides developmental pathways for children within some ecological-cultural (ecocultural) context. Cultural pathways are made up of everyday routines of life, and routines are made up of cultural activities (bedtime, playing video games, homework, watching TV, cooking dinner, soccer practice, visiting grandma, babysitting for money).

(Weisner, 2002: 276)

By conceptualising the people and things that made up the culture of the home as interwoven with typically occurring activities we were able to examine the ways in which the toys and technologies were integrated into family life. The approach thus draws on elements of Vygotskian sociocultural theory (eg Daniels, Cole and Wertsch, 2007; Göncü, 1999) and Bronfenbrenner's (1979) now revised ecological model of human development. However, an ecology consists not only of the people and artefacts in a particular habitat but also the ways in which it intersects with other locations, both spatially and temporally, and so we devised the mobile phone diaries as a mechanism for proxy observations within and beyond the household.

Experience sampling techniques

Experience sampling is a technique for collecting data that provides insights into the routines of everyday life. It is less resource intensive than ethnography, the 'preeminent method for understanding the ecocultural project of development' (Weisner, 1997: 178) but can operate in real time and in natural settings. Although experience sampling methods were originally used for sampling thoughts or mood at a given moment (Scollon, Kim-Prieto and Diener, 2003) and so were psychological in orientation, in an early example Csikszentmihalyi, Larson and Prescott (1977) describe 'experiential sampling' of activities via beeps from an electronic paging device to uncover 'What do adolescents do all day long?'

Typically paper-based, the procedure involves participants responding to prompts with information that has either been selected from pre-assigned categories or uses free text that is subsequently categorised by researchers. As described by Hektner, Schmidt and Csikszentmihalyi (2007: 40) the prompts can be interval- (at set times), signal- (in response to a beep or, in our case, a text message) or event-contingent (triggered by a specific occurrence, such as meal times). In an appendix to the book, they provide the coding scheme used for the experience-sampling phase of the Sloan study of teenagers in the USA which included 80 codes for place and nearly 200 for their thoughts and activities when signalled by a beep, including taking marijuana, quitting a job, 'thinking about romantic interest – specific' and 'thinking: meaning of life/religion'.

Different technologies have been enrolled to solve the retention problems caused by onerous paper-based diaries (voicemail for Palen and Salzman, 2002; text messages for Rönkä, Malinen, Kinnunen, et al., 2009) and developments in mobile technologies have also opened up possibilities for research

to produce data on activities, movement and location (Büscher, Urry and Witchger 2011; Laurier 2010). Most studies still do not use visual data. For instance, Raento and Oulasvirta (2009) describe a study of teenagers' movements with automatic data logging by location awareness software and, in a forerunner of the approach described here, Mikkelsen and Christensen (2009) used GPS (global positioning system) tracking combined with a questionnaire by text message to generate quantitative data on the movements of children aged ten to thirteen. This reliance on text can mean that the information is sparse but, by contrast, video can produce an overwhelming quantity of data. Gillen, Cameron, Tapanya et al. (2007) produced a richly detailed 'day in the life' of two-year-old children from extensive video but its transcription and analysis is very resource intensive. The mobile phone diary's combination of picture and text message lends itself to the descriptive orientation of the ecocultural approach and is designed to balance richness of material with simplicity of data collection and analysis.

The mobile phone diaries

Our response to the challenge of finding out more about the everyday lives of young children at home was to involve parents in collecting data on our behalf by taking photographs with their mobile phones at designated intervals. We completed three rounds of data collection in December 2008, May 2009, and October 2009, all on Saturdays as we wanted to include as many members of the household as possible, and between the hours of nine to five as we did not want to intrude into family time in the early mornings or evenings. The ethical issues associated with this method needed to be dealt with sensitively and are likely to become increasingly complex as recording and sensing technologies become more advanced (Perry and Marion, 2010). We gained written consent for each of the three rounds of the mobile phone diaries from parents and it was agreed that the data could illustrate articles and presentations but would not be used in conjunction with any additional identifying information, so all the names used in this paper are pseudonyms. We described the task to children but parents were also asked to explain the task to them and judge their willingness to participate in advance of each round.

We proposed the activity after several visits, so parents were willing research partners by this stage and eleven out of the 14 families chose to participate. Of those that did not, the Collins' (high SES) were enjoying a child-free weekend, the O'Dares (high SES) wanted to participate but had problems with their phone on the first day, and the Hendersons (low SES) did not have a suitable mobile phone, although they had high levels of technology in the home. All three of these children were girls, so there was an uneven gender distribution for the target children (four girls and seven boys) and this had some implications for analysis.

Parents were fully briefed in person and provided with an information leaflet on what was required. We sent text prompts six times at varying intervals between 09.00 and 17.00 on the pre-arranged Saturdays and parents were asked to respond within thirty minutes with a picture message of their child along with text stating i) their location, ii) who they were with, and iii) what they were doing, with the option of a reply saying that a picture was not possible. We did not ask them to focus on anything in particular, simply whatever their child was doing when they received the prompt. The leaflet stated 'It doesn't matter what is happening at the time – your child might be watching the television, going somewhere or just doing nothing much at all. There is no need to set up the photo - it can just be spontaneous.' We confirmed receipt of each message.

The pictures and texts were used to construct an A4 laminated card of the photographs in storyboard style for each child's day (See Figure 1. This includes the pictures from the first two rounds to give an indication of the range of activities). On a subsequent visit, we asked parents and children to talk us through what was happening in the pictures, answering questions such as 'looking back, please talk us through the day', 'was this a typical day?' and 'how did you find the task?' and gave them the storyboard as a record of a day in the life of their family. The first day was atypical for most families as it took place in early December and included some seasonal activities, such as decorating the Christmas tree and delivering cards to neighbours.

Most parents reported that they had found the task straightforward, although they had different levels of confidence with the technology. Some parents were new to taking pictures on their phone but picked it up quickly and then enjoyed their new skill. Marianne Johnson had found it difficult to send picture messages and got a new phone as a result of realising the limitations of the one she had

been using on the first day; by contrast, Catherine Searl had about 500 photos on her phone and often uploaded them to Facebook. Louise McLean was keen to participate but her phone did not have picture-messaging functionality. She chose to take photos on a digital camera and then emailed them to us with a brief message, and subsequently acquired a phone with a higher specification. The level of commitment was such that Gail Bain arranged to forward our prompts to her friend on one occasion when Arden, her son, was playing there for the afternoon.

The responses from children were varied: some had a clear memory of the day and were happy to talk to us about it, others did not seem interested or did not remember the events. Some children appeared to have difficulty working out the relationship between the image presented in the storyboard and 'real life'. Katie was most interested in the picture that showed her Christmas tree; she kept looking in the corner of the room where it had been and back to the photograph, uncertain of the relationship between the two. Ewan failed to recognise himself in the pictures. Given that several weeks elapsed between the mobile phone exercise and our next visit to the family, the discussions also highlighted how much can change in a relatively short space of time. The images in the mobile phone diaries froze a moment in time and the process of discussing the day revealed what mattered to these children: Arden's bike now belonged to his little sister, Kelly's play tunnel 'has been binned' (put out as rubbish), Olly's much-loved bear has been lost.

As the eleven families were prompted to send six pictures during each of the three rounds of data collection there was a potential total of 198 individual experience snapshots. The actual total received was 190 (65 responses on day 1, 62 responses on day 2, and 63 responses on day 3) with children at the cinema or in bed as the main reasons given for missing photos. The consistent number of responses across the three days, the 96 per cent response rate and the high level of compliance with the requirements of the task suggest that the method was not overly complex or onerous, even though diary studies have been described as requiring 'a level of participant commitment and dedication rarely required in other types of research studies' (Bolger, Davis and Rafaeli, 2003: 591).

Figure 1 about here (or anywhere after this point)

Some insights into children's play

The categories for analysis arose from the study's goal of producing an account of play, learning and technology in the everyday lives of young children and the mobile phone diaries addressed two of the objectives in particular: i) documenting an ecological framework of children in their natural settings and ii) producing a detailed description of children's play activities and interactions. The analysis presented here is based predominantly on the data from the mobile phone diaries rather than other sources and provides indicative findings on children's play. However, the motivation for this account is to illustrate the potential of this method so that researchers can adapt it for their own purposes, setting up the exercise and analysing the resulting information in different ways. Depending on the study, some researchers might use a basic content analysis to assess the frequency of particular places, objects, or people; others might analyse how people construct family or investigate representations of race or class. We have conducted a linguistic categorisation of the references to play, for instance, as well as examining indoor and outdoor activities and the toys. There is a wealth of material available on the topic of analysing photographs and other visual data (eg Banks 2007; Pink 2007) but these diaries also provide scope to look at the interaction between image and text.

We wanted to develop our understanding of play given its centrality to our study and the widespread belief that this is how children of this age learn. The data from the mobile phone diaries enabled us to consider play as seen through the eyes of parents as we had found that asking them direct questions about their definitions of play in an interview was, not surprisingly, problematic. The information leaflet said that we wanted to get an idea of 'what a weekend day involves for your child'. Parents were not asked to focus on play but one of the three items required in the text message was a brief description of what their child was doing (along with where they were and who they were with) so we were able to identify all references to play included in the text messages.

Every reference to play or playing included in the text messages was identified. For instance, Arden's mother makes three direct references to play in Figure 1: playing outside on his bike, playing with a set of

safari animals and playing with a road layout mat. We found that the words 'play' or 'playing' featured in 25 per cent of the responses, although the distribution in terms of numbers of play episodes per child was very uneven, ranging from nought to ten references per child. We cannot infer from this that children spend a quarter of their time playing, but it indicated that children were perceived by their parents to be playing across a wide range of activities and at different times of day, although there were considerably more play episodes in the afternoon, perhaps because chores were done in the morning to leave the afternoon free for more child-centred activities. The rest of the time – at weekends, at least – was spent eating, napping, shopping and cooking, or going on outings with the child's entertainment and enjoyment in mind. Most activities described as play occurred at home or in the garden.

Although this was not a requirement of the exercise, many of the text messages also referred to what the child was playing with, suggesting that the prop (eg a toy or a household object used as a toy) was an integral part of defining play. In the quarter of play episodes where there was no prop, there was always a play partner, such as a friend, sibling, or other family member. Only one eighth of references are to play with technologies, suggesting that children's time is not as dominated by technology as the media coverage might have us believe (Plowman, McPake & Stephen 2010), although parents do not describe activities such as watching a DVD or television programmes as play.

More than a third of activities that were recorded by the picture messages took place beyond the home, probably accounted for by the fact that the exercise was conducted at weekends. These beyond-the-home activities encompassed domestic routines such as shopping, but other activities included explicitly child-focused outings such as visits to Santa or places designed for family trips such as Butterfly World. In Figure 1, for instance, Arden's pictures show the ways in which Saturdays are opportunities for regular activities, such as Little Kickers soccer training, visiting nearby relatives, or one-off outings, such as the trip to the garden centre, as well as play.

In summary, there was no typical pattern of play across all children in the sample or, indeed, across days. All of these children lived within 10 km of each other and the experience snapshots relate to the same times on the same three days, and yet it is the diversity of children's activities which is striking, both across the eleven children but also, for individual children, within the space of one day. In combination with other sources of data, the analysis of the mobile phone diaries illustrated the range of children's experiences, challenging prevailing notions of the homogeneity of young children's encounters with technology and highlighting differences between children with apparently similar backgrounds. This variation concerned their experiences; as we describe elsewhere (Plowman et al, 2012), there was not a high degree of variation in the toys or technologies that were available at home.

Reflections on the mobile phone diaries

We focus here on what we have learned about the key benefits of the method, as summarised below from the perspectives of the families and of the research team, but there are also shortcomings to consider. The diaries provide only a series of glimpses into a child's day and limited information on duration of activities. Our decision to exclude early morning and evening distorted the data: we know from interviews that the children typically watched television early in the morning and before bedtime at weekends. Given our interest in their technology-related activities this means we have an incomplete picture of their day. It was not possible to take photos of some activities (such as visits to the pantomime or cinema) and this also limited the data, although parents sent an explanatory text message in those circumstances: "Sorry, no picture – Katie still away at theatre watching Cinderella".

Photographs, whether taken on a mobile phone or not, privilege action and are not well suited to capturing unobservable processes such as thoughts, attitudes, feelings and perceptions. As parents' values and attitudes are central to understanding their views on children's encounters with technology we had to look beyond the mobile phone diaries for this information and used accounts of their own childhoods and responses to a set of statements for this purpose. The mobile phone diaries enabled us to describe some facets of the everyday lives of families in a specific time and place but they are one of many methods of data collection that, cumulatively, enabled us to provide the rich description sought for *Toys and Technology*.

Family perspectives

The mobile phone diary was less onerous for families than completing a paper-based time-use diary. The text message prompts meant that there was no need to recall events later because the response was contemporaneous with the event being recorded and parents did not need to remind themselves to complete the exercise. The researcher did not intrude into activities and the family had control over the images to which the researchers had access: they could choose to ignore the text prompt, or to send a message without a picture: "Olly's still in bed, he's been up most of the night". The technique does not require special equipment as, according to Ofcom (2011), 91 per cent of UK adults use a mobile phone and parents do not need to remember to keep it with them as they habitually have it to hand when they are with their children. This meant that it was easy to integrate the procedure into daily routines and the wide range of locations in which photos were taken (swimming pools, restaurants, a library, a garden centre, among many) suggested that this method was flexible and easy to use.

The text message provided an informal, undemanding way for mothers to interpret their children's activities within the context of family life and its brevity revealed what was salient to them within the framework of the questions we asked them to answer. This was more direct and less intimidating than having to provide an account of their child's day in a retrospective narrative, and the informality associated with text messaging resulted in some parents signing off their messages to us with a kiss (as in Figure 1) or, in one case, 'mummy'.

Feedback from the parents suggested that sharing this activity with their child was pleasurable. Van House (2009) and Rose (2004) refer to the burden of organising family photos and our offer of a readymade memento of a day in their child's life was attractive. The high level of compliance and retention throughout the three rounds suggested that the participants saw some value in the activity as well as a desire to satisfy our request – their only incentive, apart from the laminated storyboards, was £10 towards their costs.

Researcher perspectives

From the researchers' point of view, the method was straightforward to set up and was easy to duplicate on subsequent rounds once parents were familiar with the procedures. As the participants used their own mobile phones they did not need to be trained and this contributed to the 100 per cent retention rate. The method generated data that could easily be stored and managed, particularly as compared to video. As well as providing insights into the spatial dimensions of their lives, the date and time stamped messages created a record of activities that gave us an understanding of the temporal organisation of the children's days including insights into the mundane or routine aspects of day-to-day life that may get overlooked by other forms of data collection, such as interviews. As the researcher's presence at the fieldwork site was not required the method enabled us to gain insights into the range of activities, resources, people and places that make up the ecocultural context of children's lives and which are difficult to access by other means.

There was nothing about the act of taking pictures that was unusual in this research setting and the frequency with which parents generally take photographs of their children reduced the element of performance: as Sontag (1979: 8) observes, 'Not to take pictures of one's children, particularly when they are small, is a sign of parental indifference'. Although the audience for these photographs, initially at least, was us as researchers rather than other family members, the children were more likely to be relaxed than they would be in an outsider's presence.

The combination of text and image addressed some of the concerns about interpretation of the data. For instance, two of the text messages referred to boys 'playing Star Wars': in one case Leo was playing the game on the Wii and in the other Liam and a friend were role playing Stars Wars with a lightsaber but we need the image to understand that the referent of the text is different in each case. Another text message refers to 'Splashing thru puddles on way 2 bakers 2 get cakes 4 tea aftr swim'. The image of this apparently idyllic episode in Kelly's day shows her looking cold and unhappy in a hooded anorak in the pouring rain. A reliance on text alone would not provide sufficient contextual information to make grounded inferences about the children's activities but the pictures alone would often fail to provide the desired information on location or participants.

Visual data

In *The big picture?* (Plowman and Stephen, 2008) we remarked that researchers are attracted to video as a medium for recording data because there is an implicit belief that the research setting is directly knowable through what we see and that real life can be 'captured'. Video is considered to provide more potentially illuminating data than questionnaires, interviews or field notes because it appears to represent the complexities of social life. Similar assumptions are also made about photographs and we do not suggest that the method described here provides a short cut to authenticity any more than other forms of data collection. Making principled decisions (ibid: 554) at least has the benefit of providing some transparency in this process. These were (a) to state an explicit rationale for the format; (b) to maintain alignment between the theoretical and empirical approaches; and (c) to ensure fitness for purpose.

In the case of the mobile phone diaries, our *rationale* was to identify a format that lent itself to the content that we were interested in (glimpses of everyday life) and the analytical procedures that were appropriate to the research question 'what do children do?' The ecocultural approach framing the study design meant that we needed to develop an understanding of family cultures and practices. This was achieved by providing instances of children's activities both at and beyond the home and showing the people and things that featured in their lives, so *maintaining alignment between the theoretical and empirical approaches*. It was also important that the end result could form the basis of discussions with both parents and children. Our desire to enlist parents to collect data on our behalf meant that we needed a method which, from the parents' perspectives, was not too intrusive, was easy to understand, gave them control over what was made available to us, and used readily available research tools.

From our perspective, we wanted minimal distortion of the data in the translation from the form in which it was collected to the form in which it was analysed. These various criteria meant that by using the method described here we were able to ensure *fitness for purpose*. Typically, video and audio recordings need to be translated to another medium such as written transcripts to facilitate interrogation by researchers during the process of analysis and again during the process of representing the outcomes of this analysis for dissemination to others. This entails a process of making judgements at the recording stage about the focus of attention and what should be recorded but this is delegated to the parent-photographer here, so the participants are actively involved in the construction of the data.

Epistemological questions about what can be known are thrown into relief by the use of visual methods. Buckingham (2009: 635) cautions that they have been overused and insufficiently problematised and we share his view that 'naïve empiricism' sometimes underlies their use, particularly in the guise of promoting participation in the research process (see also Piper & Frankham 2007). With respect to this dataset, however, we are not unduly troubled by notions of authenticity or the constructed nature of the image: we know that the pictures are not simply an image of a child and their surroundings. While there may have been an element of parents constructing an image of family for the camera (cf Van House 2009), we had no evidence to suggest this negated the value of this approach or distorted the images. Demanding purity of motive seems misplaced: the parent-photographer's representations of what it is to be a good parent or to have a good childhood are of interest in their own right and, as researchers, our interpretations are shaped by our research agenda, our own histories and our previous interactions with these families.

Notwithstanding the crisis of representation, we take a pragmatic view that the images of the situations photographed by the parents were sufficiently mimetic for our purposes and that the images were unlikely to have been manipulated until we re-presented them in the storyboard. Apart from anything else, the picture messages were generally sent very quickly after the text prompt, as indicated in the timings on Figure 1, and Rose (2010: 126) claims that manipulation is a 'dormant affordance of family snaps'. This 'day in the life' added a narrative dimension that was not apparent in the individual images but it does not alter their surface content – the only additional re-presentation involved was adding the verbatim transcription of the text messages in the format shown in Figure 1. Similarly, Rose (ibid) claims that indexicality (ie the presumed relationship between the thing photographed and the thing itself, in this case children) is 'one of the most important aspects of family photographs' and it is notable that Barthes (1980/2000), well known for his semiotic analysis of images, suspended this approach for a much more direct and primitive response to the photograph

of his mother as a child that he found after her death. For him, the photo transcended the analysis of a semiologist or sociologist.

The photos taken for the mobile phone diaries hover between the personal and the documentary. For the mothers who take the photos, they are images of their child, their home, and their possessions but they know that their purpose is to contribute to research, even if they do not know the details. For us, they have ethnographic value but we acknowledge that we are working within known and unknown constraints. We devised this technique to take into account the viewpoint of social actors and the embeddedness of social action within these constraints, what Becker (1996: 57) describes as a 'practical epistemology'.

While some practices of family photography have shifted in a digital age (Graham, Laurier, O'Brien and Rouncefield 2011; Van House 2011), others are not so different from what Chalfen (1987) refers to as the 'Kodak culture' of the home mode of photography, within which photos are taken to record special occasions and shared within an existing social group. Miller and Edwards (2007) describe the ways in which many of the features of Kodak culture are retained but digitally adapted, but they also identify the emergence of a group they call 'Snaps' who make extensive use of online sites such as Flickr and take photos in much higher quantities. The photos in this study do not fall into either category as they resulted from researcher intervention. The experiences recorded by the photos were naturally occurring, although the act of taking the photos in these particular circumstances was not. They combine an element of structured reportage with the informality of the family photograph, summarised in our description of the photographs as 'experience snapshots'.

Conclusion

In his study of three-year-olds in seven countries, Tudge (2008: 89) describes an ecocultural approach that requires researchers

to pay simultaneous attention to aspects of the individuals who are the focus of the study, aspects of the context (immediate, cultural, and historical), and (most important) to the actions and interactions going on between these individuals and the social partners, objects, and symbols that play important roles in their development.

The mobile phone diaries provide a partial solution to this requirement for 'simultaneous attention'. They are *visual*, presenting possibilities for observation by proxy, *mobile*, enabling us to glimpse into everyday lives beyond the home, including in hard-to-reach places such as car journeys, and *textual*, providing interpretation and commentary by the parents. They also convey information generated in the here and now, but easily available for future analysis. As Weisner (2002) indicates above, it is the 'everyday routines of life' that are central to an ecocultural approach. The mobile phone diaries are particularly well suited for recording these as they provide a temporal dimension, present the viewpoint of those being studied and provide contextual information. The mobile phone diaries enabled us to describe some facets of the everyday lives of families in a specific time and place but they are one of many methods of data collection that, cumulatively, enabled us to provide the rich description sought for *Toys and Technology*.

Technological advances will supersede the mobile phone diaries in time. As such, we can think of this technique as an emergent method (Hesse-Biber and Leavy 2008) that provided a dataset not previously easily available and allowed us to consider new questions about the relationship between researcher and researched. The technique helped us to get a much better sense of the range of activities in a child's day, to demonstrate that play is still important for these three- and four-year-old children and to see that technology does not dominate their lives to the extent that some media commentators would have us believe. The method could be used to generate quantitative information about frequency of events but it also enabled us to gain insights into the range of activities, resources, people and places that make up the ecology of children's play and which are difficult to access by other means. The mundane activities of everyday life provide an arena for children's experiences and, through those experiences, for learning and development; attention to these apparently inconsequential aspects of quotidian routines can therefore provide useful data for understanding more about family interactions and activities.

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References

- Banks M ed. (2007) *Using Visual Data in Qualitative Research*. London: Sage.
- Barthes R (1980/2000) *Camera Lucida*, trans R Howard. London: Vintage.
- Becker H. (1996) The epistemology of qualitative research. In Jessor R, Colby A and Shweder R eds. pp 53-71, *Ethnography and Human Development: Context and meaning in Social Inquiry* Chicago, University of Chicago Press.
- Bolger N, Davis A and Rafaeli E (2003) Diary methods: capturing life as it is lived. *Annual Review of Psychology* 54: 579-616.
- Bronfenbrenner U (1979) *The Ecology of Human Development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Buckingham D (2009) 'Creative' visual methods in media research: possibilities, problems and proposals. *Media, Culture & Society* 31(4): 633-652.
- Büscher M, Urry J and Witchger K (2011) *Mobile Methods*. Abingdon: Routledge.
- Chalfen R (1987) *Snapshot Versions of Life*. Bowling Green, OH: Bowling Green State University Popular Press.
- Clark A and Moss P (2011) *Listening to Young Children: the Mosaic Approach* (2nd ed). London: National Children's Bureau.
- Csikszentmihalyi M, Larson R and Prescott S (1977) The ecology of adolescent activity and experience. *Journal of Youth and Adolescence* 6(3): 281-294.
- Daniels H, Cole M and Wertsch J. (eds) (2007) *The Cambridge Companion to Vygotsky*. New York: Cambridge University Press.
- Gallacher L and Gallagher M (2008) Methodological immaturity in childhood research? Thinking through 'participatory methods'. *Childhood* 15(4): 499-516.
- Gillen J, Cameron C, Tapanya S, Pinto G et al. (2007) 'A day in the life': advancing a methodology for the cultural study of development and learning in early childhood. *Early Child Development and Care* 177(2): 207-218.
- Göncü A (ed) (1999) *Children's Engagement in the World: Sociocultural Perspectives*. Cambridge: Cambridge University Press.
- Graham C, Laurier E, O'Brien V and Rouncefield M (2011) New visual technologies: shifting boundaries, shared moments. *Visual Studies* 26 (2): 87-91.

- Plowman L. & Stevenson O. (forthcoming, 2012) Using mobile phones to explore children's everyday lives. To appear in *Childhood, A journal of global child research*.
doi: 10.1177/0907568212440014
- Hektner J, Schmidt J and Csikszentmihalyi (2007) *Experience Sampling Method: Measuring the quality of everyday life*. Thousand Oaks, CA: Sage.
- Hesse-Biber SN and Leavy P (eds) (2008) *Handbook of Emergent Methods*. New York: Guilford Press.
- Laurier E (2010) Being there/seeing there: recording and analysing life in the car. In Fincham B, McGuinness M, Murray L eds. pp. 103-117, *Mobile Methodologies*. Palgrave Macmillan, Basingstoke.
- Mikkelsen M and Christensen P (2009) Is children's independent mobility really independent? A study of children's mobility combining ethnography and GPS/mobile phone technologies. *Mobilities* 4 (1): 37-58.
- Miller A and Edwards WK (2007) Give and take: A study of consumer photo-sharing culture and practice. In: Proceedings of the ACM conference on computer human interaction (CHI '07), April 28-May 3, 2007. San Jose, California. New York: ACM Press, 347-356.
- Ofcom (2011) *Technology Tracker Survey Q1 2011, Tables 25 and 32*, available from ofcom.org.uk [accessed 2 October 2011].
- Palen L and Salzman M (2002) Voice-mail diary studies for naturalistic data capture under mobile conditions. In: Proceedings of the ACM conference on computer supported cooperative work (CSCW'02), November 16-20, 2002. New Orleans, Louisiana, 87-95.
- Perry S and Marion J (2010) State of the ethics in visual anthropology. *Visual Anthropology Review* 26 (2): 96-104.
- Pink S (2007) *Doing Visual Ethnography: Images, media and representation in research* (2nd ed). London: Sage.
- Piper H and Frankham J (2007) Seeing voices and hearing pictures: Image as discourse and the framing of image-based research. *Discourse* 28 (3): 373-387.
- Plowman L, Stevenson O, Stephen C and McPake J (2012) Preschool children's learning with technology at home. *Computers & Education* 59(1): 30-37.
- Plowman L, McPake J and Stephen C. (2010) The technologisation of childhood? Young children and technologies at home. *Children and Society* 24 (1): 63-74.
- Plowman L and Stephen C (2008) The big picture? Video and the representation of guided interaction. *British Educational Research Journal* 34(4): 541-565.
- Raento M, Oulasvirta A and Eagle N (2009) Smartphones: An emerging tool for social scientists. *Sociological Methods Research* 37: 426-454.
- Rönkä A, Malinen K, Kinnunen U, Tolvanen A and Lämsä T (2009) Capturing daily family dynamics via text messages: development of the mobile diary. *Community, Work and Family* 13(1): 5-21.
- Rose G (2010) *Doing Family Photography: The domestic, the public and the politics of sentiment*. Farnham: Ashgate.
- Rose G (2004) 'Everyone's cuddled up and it just looks really nice': an emotional geography of some mums and their family photos. *Social & Cultural Geography* 5 (4): 549-564.
- Scollon C, Kim-Prieto C and Diener E (2003) Experience sampling: promises and pitfalls, strengths and weaknesses. *Journal of Happiness Studies* 4: 5-34.

Plowman L. & Stevenson O. (forthcoming, 2012) Using mobile phones to explore children's everyday lives. To appear in *Childhood, A journal of global child research*.
doi: 10.1177/0907568212440014

Sontag S (1979) *On Photography*. Harmondsworth: Penguin.

Stephen C, Stevenson O and Adey C (forthcoming) Play and learning with technologies at home. Submitted to *Journal of Early Childhood Research*.

Stevenson O and Adey C (2010) Toy tours: reflections on walking-whilst-talking with young children at home, *Qualitative Researcher* 12: 8-10.

Thomson P (ed) (2008) *Doing Visual Research with Children and Young People*. Abingdon: Routledge.

Tudge J (2008) *The Everyday Lives of Young Children*. Cambridge: Cambridge University Press.

Van House N (2011) Personal photography, digital technologies, and the uses of the visual. *Visual Studies* 25 (1):125-134.

Van House N (2009) Collocated photo sharing, story-telling, and the performance of self, *International Journal of Human-Computer Studies* 67: 1073-1086.

Weisner T (2002) Ecocultural understanding of children's developmental pathways. *Human Development* 45: 275-281.

Weisner T (1997). The ecocultural project of human development: why ethnography and its findings matter. *Ethos* 25(2): 177-190.

FIGURE 1: SAMPLE STORYBOARD FOR ARDEN BAIN*

6th December 2008					
9am (09:14)**	11am (11:04)	1 pm (13:01)	1:30pm (13:46)	3pm (15:04)	5pm (17:01)
					
Arden reading a book, himself	Decorating xmas tree with mum and sister!	Arden watching 'cars' on tv!	Arden making jelly with mum!	Arden playing outside on bike with sister!	Eating fajitas with all the family!

9th May 2009					
9am (10:12)	11am (11:02)	1 pm (13:08)	2 pm (14:06)	3pm (15:25)	5pm (17:14)
					
Arden is at little kickers football training with his friend jack. They r practicing ball control.	In car with brother and sister on way 2 grandad's house! X	At butterfly world with family! X	Going into dobbies garden centre! X	Back in house playing with safari set mum bought me at butterfly world! X	Playing with car mat on bed with sister while mum runs bath! X

* 'Arden Bain' is a pseudonym. We have consent to publish these photographs. Text is verbatim.

** The first time is when the prompts were sent. The time in brackets is when the reply was received.